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Test 1908: Case-IH Steiger 380 and 385 Diesel 16-Speed Also Case-IH STX 380 Diesel 16-Speed

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NEBRASKA OECD TRACTOR TEST 1908 - SUMMARY 576

CASE IH STEIGER 380 DIESEL

ALSO CASE IH STX 380 DIESEL

ALSO CASE IH STEIGER 385 DIESEL

16 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1001 rpm)					
347.00 (258.76)	2000	20.68 (78.27)	0.417 (0.254)	16.78 (3.31)	
Maximum Power (1 Hour)					
390.87 (291.47)	1800	22.65 (85.75)	0.406 (0.247)	17.26 (3.40)	
VARYING POWER AND FUEL CONSUMPTION					
347.00 (258.76)	2000	20.68 (78.27)	0.417 (0.254)	16.78 (3.31)	Air temperature
300.19 (223.85)	2034	18.46 (69.87)	0.430 (0.262)	16.26 (3.20)	80°F (27°C)
227.73 (169.82)	2062	15.04 (56.94)	0.462 (0.281)	15.14 (2.98)	Relative humidity
154.80 (115.43)	2085	11.86 (44.88)	0.536 (0.326)	13.06 (2.57)	32%
76.67 (57.17)	2118	7.83 (29.63)	0.715 (0.435)	9.79 (1.93)	Barometer
1.58 (1.18)	2142	4.60 (17.41)	20.356 (12.382)	0.34 (0.07)	28.68" Hg (97.12 kPa)
Maximum torque -1291 lb.-ft. (1751 Nm) at 1200 rpm					
Maximum torque rise - 41.8%					
Torque rise at 1600 engine rpm - 34%					
Power increase at 1800 engine rpm - 12%					

DRAWBAR PERFORMANCE

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F cool- ing med	°C Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—4th Gear									
319.41 (238.18)	27972 (124.43)	4.28 (6.89)	1999	3.0	0.450 (0.274)	15.57 (3.07)	186 (85)	64 (18)	28.43 (96.28)
75% of Pull at Maximum Power—4th Gear									
247.38 (184.47)	21004 (93.43)	4.42 (7.11)	2046	2.2	0.478 (0.291)	14.66 (2.89)	184 (84)	78 (26)	28.35 (96.00)
50% of Pull at Maximum Power—4th Gear									
168.92 (125.96)	14030 (62.41)	4.52 (7.27)	2077	1.5	0.539 (0.328)	13.00 (2.56)	183 (84)	81 (27)	28.32 (95.90)
75% of Pull at Reduced Engine Speed—7th Gear									
247.77 (184.77)	21019 (93.49)	4.42 (7.11)	1480	2.2	0.437 (0.266)	16.03 (3.16)	184 (84)	78 (26)	28.34 (95.97)
50% of Pull at Reduced Engine Speed—7th Gear									
168.97 (126.00)	13992 (62.24)	4.53 (7.29)	1506	1.5	0.463 (0.281)	15.14 (2.98)	183 (84)	82 (28)	28.31 (95.87)

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832

Dates of tests: October 16 - 23, 2007

Manufacturer: Case Corporation, 700 State Street Racine, Wi. 53404 USA.

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60° F (15°/15° C) 0.8407 Fuel weight 7.000 lbs/gal (0.839 kg/l) Oil SAE 15W40 API service classification CI-4 Transmission and hydraulic lubricant Akcelia Hy-Tran Ultra fluid Front and rear axle lubricant Akcelia Hy-Tran Ultra fluid Total time engine was operated 14.0 hours

ENGINE: Make Iveco Diesel Type six cylinder vertical with turbocharger and air to air aftercooler Serial No. 94962 Crankshaft lengthwise Rated engine speed 2000 Bore and stroke 5.314" x 5.906" (135.0 mm x 150.0 mm) Compression ratio 16.5 to 1 Displacement 786 cu in (12880 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements and aspirator Oil filter one full flow cartridge Oil cooler engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil Fuel filter one paper element Fuel cooler radiator for returned fuel Muffler vertical Cooling medium temperature control one thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 138.2 - 146.7 lb/h (62.7 - 66.5 kg/h) High idle: 2130 - 2170 rpm Turbo boost: nominal 23.9 - 26.8 psi (165 - 185 kPa) as measured 26.4 psi (182 kPa)

CHASSIS: Type four wheel drive with triples Serial No. *Z7F105673* Tread width rear 73.6" (1870 mm) to 187.6" (4766 mm) front 73.6" (1870 mm) to 187.6" (4766 mm) Wheelbase 154.0" (3911 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with full range operator controlled powershift Nominal travel speeds mph (km/h) first 2.55 (4.10) second 3.07 (4.94) third 3.70 (5.96) fourth 4.46 (7.18) fifth 5.13 (8.25) sixth 5.63 (9.06) seventh 6.17 (9.93) eighth 6.78 (10.91) ninth 7.46 (12.00) tenth 8.19 (13.18) eleventh 8.98 (14.45) twelfth 9.87 (15.88) thirteenth 11.33 (18.23) fourteenth 13.64 (21.95) fifteenth 16.49 (26.53) sixteenth 19.84 (31.93) reverse 3.86 (6.21), 8.53 (13.73) Clutch multiple wet disc electro-hydraulically operated by foot pedal Brakes single wet disc hydraulically actuated by foot pedal Steering hydrostatic and articulated Power take-off 1000 rpm at 1998 engine rpm Unladen tractor mass 41605 lb (18872 kg)

DRAWBAR PERFORMANCE AT 1800 RPM MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2nd Gear									
300.59 (224.15)	41365 (184.00)	2.73 (4.39)	1999	10.4	0.479 (0.291)	14.64 (2.88)	184 (84)	54 (12)	28.45 (96.34)
3rd Gear									
337.43 (251.62)	41023 (182.48)	3.08 (4.96)	1841	8.5	0.463 (0.282)	15.14 (2.98)	186 (86)	61 (16)	28.45 (96.34)
4th Gear									
357.05 (266.25)	35202 (156.59)	3.80 (6.12)	1801	4.5	0.440 (0.268)	15.91 (3.13)	187 (86)	66 (19)	28.43 (96.28)
5th Gear									
357.88 (266.87)	30409 (135.26)	4.41 (7.10)	1801	3.4	0.440 (0.268)	15.92 (3.14)	187 (86)	68 (20)	28.42 (96.24)
6th Gear									
358.54 (267.36)	27540 (122.50)	4.88 (7.86)	1805	2.9	0.440 (0.268)	15.93 (3.14)	186 (86)	73 (23)	28.41 (96.21)
7th Gear									
356.09 (265.54)	24907 (110.79)	5.36 (8.63)	1803	2.6	0.443 (0.269)	15.83 (3.12)	186 (86)	75 (24)	28.40 (96.17)
8th Gear									
356.06 (265.51)	22631 (100.67)	5.90 (9.50)	1801	2.4	0.442 (0.269)	15.86 (3.12)	185 (85)	76 (24)	28.39 (96.14)
9th Gear									
352.70 (263.01)	20307 (90.33)	6.51 (10.48)	1804	2.1	0.446 (0.271)	15.73 (3.10)	186 (85)	76 (24)	28.38 (96.11)
10th Gear									
354.45 (264.31)	18570 (82.60)	7.16 (11.52)	1802	1.9	0.444 (0.270)	15.80 (3.11)	185 (85)	76 (24)	28.38 (96.11)
11th Gear									
345.80 (257.86)	16480 (73.31)	7.87 (12.66)	1804	1.7	0.455 (0.277)	15.39 (3.03)	184 (84)	77 (25)	28.37 (96.07)
12th Gear									
347.47 (259.11)	15039 (66.89)	8.66 (13.94)	1804	1.5	0.453 (0.275)	15.47 (3.05)	185 (85)	77 (25)	28.36 (96.04)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

Note: The performance figures on this report are the result of replacing the electronic engine control module of the Case IH Steiger 430 with the Case IH Steiger 380 module.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. The pull in 2nd gear was limited to avoid excessive tractor bouncing. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 102°F (39°C). The manufacturer's claim of 75 dB(A) cab sound level, with Luxury cab, was not verified. The performance figures on this Summary were taken from tests conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1908**, Nebraska Summary 576, February 8, 2008.

Roger M. Hoy
Director

M.F. Kocher
R.E. Yoder
J.A. Smith
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH DELUXE CAB

dB(A)

At no load in 4th gear	74.8
Bystander in 16th gear	88.2

TIRES AND WEIGHT

Rear tires - No., size, ply & psi (kPa)

Front tires - No., size, ply & psi (kPa)

Height of Drawbar

Static Weight with operator- Rear

- Front

- Total

Tested without ballast

Six 480/80R46;***;13(90)

Six 480/80R46;***;14(95)

21.0 in (535 mm)

17810 lb (8078 kg)

23970 lb (10873 kg)

41780 lb (18951 kg)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: IVN

Quick Attach: yes

Maximum force exerted through whole range:	19620 lbs (87.3 kN)	
	<u>Standard pump</u>	<u>High flow pump</u>
i) Opening pressure of relief valve:	NA	NA
Sustained pressure of the open relief valve:	3040 psi (210 bar)	2990 psi (206 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	40.6 GPM (153.7 l/min)	55.8 GPM (211.2 l/min)
iii) Pump delivery rate at maximum hydraulic power:	37.7 GPM (142.7 l/min)	54.3 GPM (205.5 l/min)
Delivery pressure:	2805 psi (193 bar)	2604 psi (180 bar)
Power:	61.7 HP (46.0 kW)	82.5 Hp (61.5 kW)

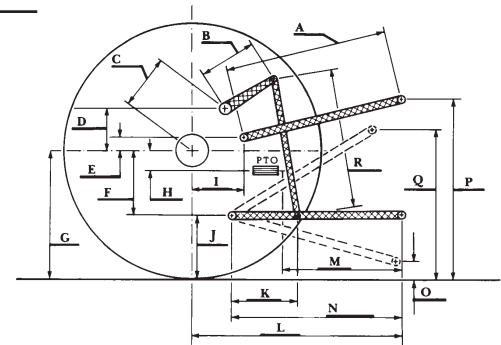
TwinFlow system

	<u>Main pump</u>	<u>TwinFlow pump</u>
i) Sustained pressure at compensator cutoff:	3026 psi (208 bar)	3041 psi (210 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	56.6 GPM (214.2 l/min)	37.7 GPM (142.6 l/min)
Combined flow:	94.3 GPM (356.8 l/min)	
iii) Pump delivery rate at maximum hydraulic power:	55.4 GPM (209.5 l/min)	35.9 GPM (135.9 l/min)
Delivery pressure:	2430 psi (167 bar)	2861 psi (197 bar)
Power:	78.5 HP (58.5 kW)	59.9 Hp (44.7 kW)

HITCH DIMENSIONS AS TESTED - NO LOAD

	inch	mm
A	32.6	827
B	29.9	760
C	23.2	590
D	22.0	558
E	13.5	342
F	13.4	340
G	38.2	970
H	6.4	162
I	22.8	578
J	24.8	630
K	29.0	736
L	56.3	1431
*L'	63.6	1615
M	34.3	871
N	46.5	1181
O	7.9	200
P	48.6	1234
Q	42.2	1072
R	39.8	1010

*L' to Quick Attach ends



Case IH STEIGER 380 Diesel

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